CLAIMS

1. A liquid ejecting head having heat-energy evolving elements that evolve heat energy to eject liquid,

wherein said heat-energy evolving elements are constructed of an integral substrate, assume a zigzag pattern (in plan view),

having conductors connected thereto at the turnaround part of the zigzag pattern, and

each of the elements has thereon a nozzle through which liquid is ejected.

2. A liquid ejecting head having heat-energy evolving elements that evolve heat energy to eject liquid,

wherein said heat-energy evolving elements are constructed of an integral substrate, assume a zigzag pattern (in plan view), and have conductors connected thereto at the turnaround part of the zigzag pattern such that the main part evolving heat energy to eject liquid is divided into at least two parts by the turnaround part of the zigzag pattern, and

each of the elements has thereon a nozzle through which liquid is ejected.

3. A liquid ejecting head having heat-energy evolving elements that evolve heat energy to eject liquid,

wherein said heat-energy evolving elements are

constructed of an integral substrate and comprise approximately U-shaped parts (in plan view),

having conductors connected thereto at the turnaround part of the approximately U-shaped pattern,

each of the elements has thereon a nozzle through which liquid is ejected.

4. A liquid ejecting head having heat-energy evolving elements that evolve heat energy to eject liquid,

wherein said heat-energy evolving elements are constructed of an integral substrate and comprises approximately U-shaped parts (in plan view), and have conductors connected thereto at the turnaround part of the approximately U-shaped parts, such that the main part evolving heat energy to eject liquid is divided into at least two parts by the turnaround part of the approximately U-shaped parts, and

each of the elements has thereon a nozzle through which liquid is ejected.

5. A liquid ejecting head having heat-energy evolving elements that evolve heat energy to eject liquid,

wherein said heat-energy evolving elements are constructed of an integral substrate, comprises at least main parts divided by at least one slit formed in part of the substrate,

having conductors connected thereto at the part of the two where main parts are joined together, and

each of the elements has thereon a nozzle through which liquid is ejected.

6. A liquid ejecting head having heat-energy evolving elements that evolve heat energy to eject liquid,

wherein said heat-energy evolving elements are constructed of an integral substrate, comprise the main part of evolving heat energy to eject liquid, said main part being divided into at least two parts by at least one slit formed in part of the substrate,

having conductors connected thereto at the part where the two main parts are joined together, and

each of the elements has thereon a nozzle through which liquid is ejected.

7. A liquid ejecting head having heat-energy evolving elements that evolve heat energy to eject liquid,

wherein said heat-energy evolving elements are constructed of an integral substrate, assume a zigzag pattern (in plan view),

having conductors connected thereto in the region outside the inner turnaround line at the turnaround part of the zigzag pattern,

each of the elements has thereon a nozzle through

which liquid is ejected.

8. A liquid ejecting head having heat-energy evolving elements that evolve heat energy to eject liquid, wherein said heat-energy evolving elements are constructed of an integral substrate, assume a zigzag pattern (in plan view), and have conductors connected thereto in the region outside the inner turnaround line at the turnaround part of the zigzag pattern, so that the main part evolving heat energy to eject liquid is divided into at least two parts by the turnaround part of the zigzag pattern, and

each of the elements has thereon a nozzle through which liquid is ejected.

9. The liquid ejecting head as defined in claim 8,

wherein the heat energy evolving element has other conductors connected thereto on the opposite side beyond the main part from the conductors,

the distance from the turnaround line of the zigzag pattern to the edge of the conductor is 0.08 to 0.10 times the distance between said conductor and said other conductors.

10. A liquid ejecting head having heat-energy evolving elements that evolve heat energy to eject liquid,

wherein said heat-energy evolving elements are constructed of an integral substrate, comprises an approximately U-shaped part (in plan view),

having conductors connected thereto in the region outside the inner turnaround line at the turnaround part of the approximately U-shape part,

each of the elements has thereon a nozzle through which liquid is ejected.

11. A liquid ejecting head having heat-energy evolving elements that evolve heat energy to eject liquid,

wherein said heat-energy evolving elements are constructed of an integral substrate, comprises an approximately U-shaped part (in plan view), and have conductors connected thereto in the region outside the inner turnaround line at the turnaround part of the approximately U-shape part, so that the main part evolving heat energy to eject liquid is divided into at least two parts by the turnaround part of the approximately U-shaped part,

each of the elements has thereon a nozzle through which liquid is ejected.

12. The liquid ejecting head as defined in claim 11,

wherein the heat energy evolving element has

other conductors connected thereto on the opposite side beyond the main part from the conductors,

the distance from the turnaround line of the approximately U-shaped parts to the edge of the conductor is 0.08 to 0.10 times the distance between said conductor and said other conductors.

13. A liquid ejecting head having heat-energy evolving elements that evolve heat energy to eject liquid,

wherein said heat-energy evolving elements are constructed of an integral substrate, comprises the heat energy evolving part divided into at least two main parts by at least one slit formed in part of said substrate,

having conductors connected thereto in the region outside the slit at the part where said two main parts are joined together,

each of the elements has thereon a nozzle through which liquid is ejected.

14. A liquid ejecting head having heat-energy evolving elements that evolve heat energy to eject liquid,

wherein said heat-energy evolving elements are constructed of an integral substrate, comprises the heat energy evolving part divided into at least two main parts to eject heat energy to eject liquid by at least one slit formed in part of said substrate,

having conductors connected thereto in the region outside the slit at the part where said two main parts are joined together,

each of the elements has thereon a nozzle through which liquid is ejected.

15. The liquid ejecting head as defined in claim 13 or 14,

wherein the heat energy evolving element has other conductors connected thereto on the opposite side beyond the main part from the conductors,

the distance from the end of slit to the edge of the conductor is 0.08 to 0.10 times the distance between said conductor and said other conductors.

16. (Amended) A liquid ejecting apparatus having heat-energy evolving elements that evolve heat energy to eject liquid,

wherein said heat-energy evolving elements are constructed of an integral substrate, assume a zigzag pattern (in plan view), and have conductors connected thereto at the turnaround part of the zigzag pattern such that the main part evolving heat energy to eject liquid is divided into at least two parts by the turnaround part of the zigzag pattern,

each of the elements has thereon a nozzle through

which liquid is ejected,

said liquid ejecting apparatus further having a primary control means which causes said heat energy evolving elements to evolve heat energy, thereby ejecting liquid on said heat energy ejecting element through said nozzle,

secondary control means which, upon control of current flowing through at least the two divided main parts to evolve heat energy from the conductor connected to the turnaround part of the zigzag pattern, causes at least said two major parts to evolve heat energy differing in heat energy characteristics and to change the distribution of heat energy imparted to the liquid on said heat energy evolving element, thereby controlling the direction of ejection of the liquid ejected from said nozzle.

17. (Amended) A liquid ejecting apparatus having heat-energy evolving elements that evolve heat energy to eject liquid,

wherein said heat-energy evolving elements are constructed of an integral substrate, comprise an approximately U-shaped part (in plan view), and have conductors connected thereto at the turnaround part of the approximately U-shaped part such that the main part

evolving heat energy to eject liquid is divided into at least two parts by the turnaround part of the approximately U-shaped part,

each of the elements has thereon a nozzle through which liquid is ejected,

said liquid ejecting apparatus further having a primary control means which causes said heat energy evolving elements to evolve heat energy, thereby ejecting liquid on said heat energy ejecting element through said nozzle,

secondary control means which, upon control of current flowing through at least the two divided main parts to evolve heat energy from the conductor connected to the turnaround part of the approximately U-shaped pattern, causes at least said two major parts to evolve heat energy differing in heat energy characteristics and to change the distribution of heat energy imparted to the liquid on said heat energy evolving element, thereby controlling the direction of ejection of the liquid ejected from said nozzle.

18. (Amended) A liquid ejecting apparatus having heat-energy evolving elements that evolve heat energy to eject liquid,

wherein said heat-energy evolving elements are constructed of an integral substrate and divided into at least two main parts to evolve heat energy to eject liquid by at least one slit formed in at least part of

the substrate,

having conductors connected thereto at the part where the two main parts are joined together,

each of the elements has thereon a nozzle through which liquid is ejected, said liquid ejecting apparatus further having a primary control means which causes said heat energy evolving elements to evolve heat energy, thereby ejecting liquid on said heat energy ejecting element through said nozzle,

secondary control means which causes at least said two major parts to evolve heat energy differing in heat energy characteristics and to change the distribution of heat energy imparted to the liquid on said heat energy evolving element, thereby controlling the direction of ejection of the liquid ejected from said nozzle.

19. (Added) A process for production of a liquid ejecting head having heat-energy evolving elements that evolve heat energy to eject liquid from a nozzle,

said process comprising forming said energy ejecting elements in a zigzag pattern (in plan view) on an integral substrate, and

connecting a conductor to the turnaround part of the zigzag pattern, thereby dividing the main part to evolve heat energy for liquid ejection into two parts on said single heat energy evolving element.